



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/606,848

06/26/2003

Brian Phelps

T0529.70057US00

5755

59547

7590

07/26/2006

TERADYNE, INC.

c/o WOLF, GREENFIELD & SACKS, P.C.

FEDERAL RESERVE PLAZA

600 ATLANTIC AVENUE

BOSTON, MA 02210-2206

EXAMINER

BRITT, CYNTHIA H

ART UNIT

PAPER NUMBER

2138

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,848

Applicant(s)

PHELPS ET AL.

Examiner

Cynthia Britt

Art Unit

2138

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-7 and 10-17 are presented for examination. Claims 11-17 are withdrawn from consideration.

Drawings

The drawings were received on 5/2/06. These drawings are acceptable. The objections to the drawings have been withdrawn.

Oath/Declaration

Receipt is also acknowledged of new Application Data Sheet. Therefore, the objection to the Oath has been withdrawn.

Claim Rejections - 35 USC § 112

In view of applicant's arguments, the examiner would like to schedule an interview with applicant to clarify these issues, as the examiner is not clear on what is applicant is intending to claim and how this is enabled by the specification. The examiner believes it would be easier to communicate in this fashion. As such, claims 3-7 will not be addressed in this office action, and the previous rejections will stand until this can be clarified.

Response to Amendment

Election/Restrictions

Newly submitted claims 11-17 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The original set of claims are directed to a method of testing a device in which generating and applying test signals, capturing and comparing outputs, and defining a valid window of expected data. Whereas the newly added claims do not recite generating test signals nor applying the test signals but focus more on the sequencing and order of the output data. As this subject matter was not mentioned in the original claims, and the language used in this claim language would make this set of claims appropriate to be classified in 714/715, while the original claim set would be classified in 714/736. Therefore because of the classification differences the restriction is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-17 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

Applicant's arguments filed 5/2/06 have been fully considered but they are not persuasive.

Applicant argues "...the reference does not relate to processing output signals as entities or to processing captured values so that, if entities appear out of order, the device does not improperly fail a test.the reference does not teach (capturing actual output entities." Nor does the reference describe "defining a window of valid expected entities" that is used for "comparing the failed actual output entity."..."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the order of the output entities) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The specification does not define what applicant has intended "entity" to mean. Although the specification discusses communication ports and protocols, the claim language does not indicate that the claimed method pertains to communication devices or protocols. As such, the examiner has interpreted the claim language to a test of semiconductor device such as the one in the prior rejection. While the M.P.E.P. (see M.P.E.P. 2111) requires that the examiner give "the broadest reasonable interpretation" to claims "consistent with the specification" it also warns that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim, to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The claims must stand on their own. The examiner would also like to

Art Unit: 2138

point out that the way the claim language reads at present, this would also read on testing semiconductor devices using masking to mask out the "don't care" values.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Schinabeck et al. U.S. Patent No. 4,646,299.

As per claims 1 and 10, Schinabeck et al. teach the claimed program on a readable medium, test system and method for testing semiconductor devices in which test signal applying and monitoring circuits are coupled to pins of an electronic device being tested to force test stimuli signals onto input pins of the device under test. The response signals are monitored while the device is being tested. Each test signal applying and monitoring circuit includes a node to be coupled to a pin of the device under test, a digitally programmed source for supplying a test signal connectable to the node by a first switch, and a comparison circuit connected to the node by a second switch for indicating the relative amplitude of the response signal with respect to a programmed reference level. The digitally programmed source is included for providing gated voltage-current crossover forcing functions during functional testing to minimize the disturbance when the device being tested is connected and to protect out of

Art Unit: 2138

tolerance devices. Programmable voltage and current values define a pass window to assure a non-ambiguous go/no-go result during testing. (Abstract, column 4 line 56 through column 6 line 20, column 10 lines 19-34, column 21 lines 46-66)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura U.S. Patent No. 6,789,224 in view of Rivoir U.S. Publication No. 2002/0188888 A1

As per claims 1 and 10 Miura et al. teach the claimed software, system and method for testing semiconductor devices, including generating test signals, applying

Art Unit: 2138

the generated test signals to the device-under-test, capturing actual output entities from the DUT in response to the applied generated test signals comparing the actual output entities to expected output entities and identifying a fail condition where a comparison fails to match an actual output entity to an expected output entity (column 1 lines 22-44, Figure 1). Not explicitly disclosed is that if a failure is identified in the comparing step, defining a window of valid expected entities and comparing the failed actual output entity to the window of valid expected entities.

However, in an analogous art, Rivoir discloses a circuit in which a window of valid expected values are used to determine if a circuit fails or passes a test (Abstract, Figures 2 and 3). Therefore, it would have been obvious to a person having ordinary skill in the art at the time this invention was made to have used the "window of valid expected entities". This would have been obvious as in any typical test design there are what is known in the art as "don't care" values (1's or 0's which are at times masked out of the test results) and this would define a window of valid test results or expected entities.

As per claim 2, Rivoir teaches (Figure 3C elements 124c-e) the claimed further comparing the failed actual output entity to the window of valid expected entities leads to a match between the failed actual output entity and any one of the valid expected entities in the window.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

EP 1089293 A1

KUMAR, PROMOD

This patent titled "Memory test method and nonvolatile memory with low error masking probability " teaches a nonvolatile memory device having a signature code generator, generating a present signature code from an algorithm modified dynamically as a function of predefined varying parameters. A variable parameter may be the address of a memory cell being addressed; in this case, the output of the code generator is a function of data read from the cell array, the previously calculated signature code, and the address of the read data. The data are read in sequence, using an internal clock generated by an internal clock oscillator. In test mode, the memory is scanned sequentially, beginning from any memory location, selected randomly, and the signature code varies in dynamic way; at the end of memory scanning, the signature code is compared to an expected result.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.

Art Unit: 2138

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cynthia Britt
Examiner
Art Unit 2138



OK TO
enter
2/11/06
CD

AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figures 2 and 3.

Attachment: Replacement sheet
 Annotated sheet showing changes



OK to
enter
CP
7/11/04

FIG. 2
(PRIOR ART)

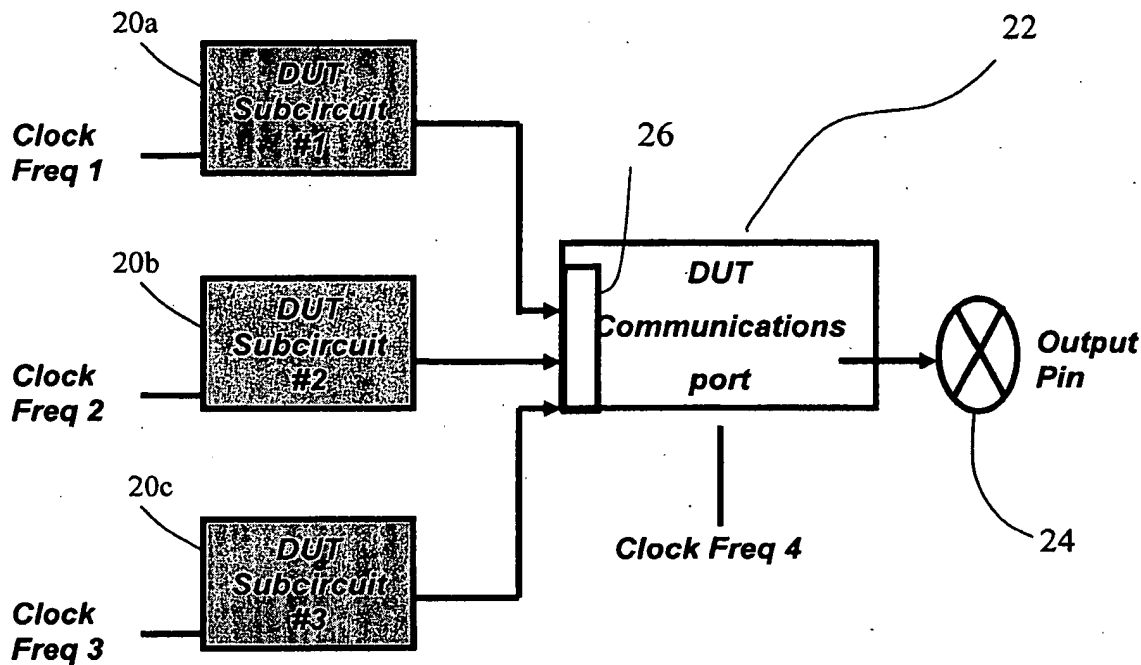
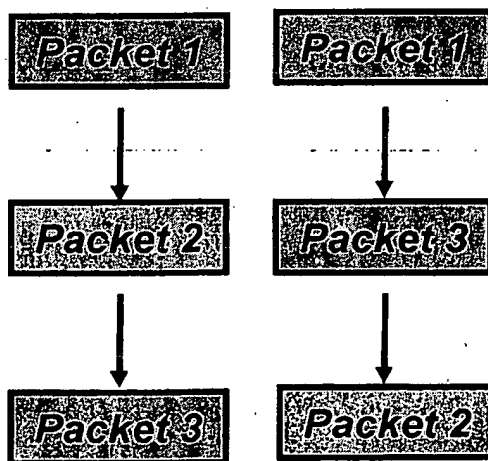


FIG. 3
(PRIOR ART)





ok to
under
CB
2-11-04

FIG. 2
(PRIOR ART)

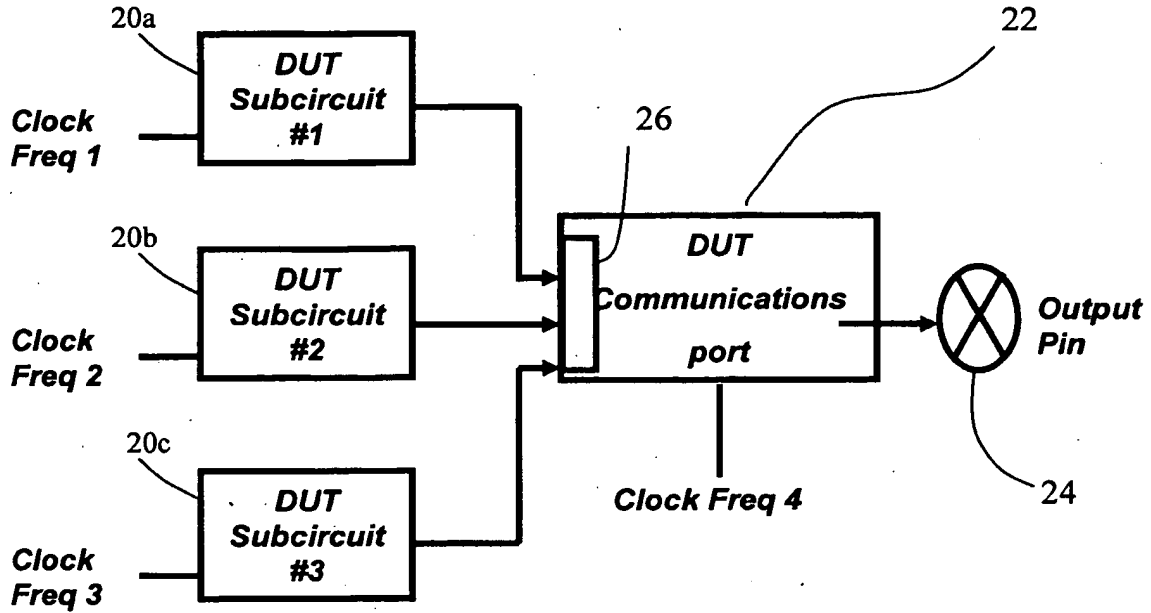


FIG. 3
(PRIOR ART)

